

Is LCC relevant in a sustainability assessment?

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It has often been claimed in the LCA community that to what extent a product is more sustainable than another can be assessed through applying the three life cycle assessment methodologies: the LCA, SLCA, and LCC. The purpose of this letter is, through a definition of sustainable development, to discuss this claim.

The probably most recognized definition of sustainable development comes from the so-called Brundtland Report, which states that: ‘Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (WCED 1987).

This definition considers both intra- and intergenerational equity in its mentioning of both the fulfilling of present and future needs; however, to our understanding, it is the aspect of intergenerational equity which is normally referred to by sustainable development and this is therefore the understanding of the term considered here.

The ability of future generations to meet their needs has often been related to the resources or capitals available to these future generations. For example by Victor (1991) who claims that ‘...sustainable development requires that the stock of capital that one generation passes on to the next be maintained or enhanced’. According to this definition, sustainable development thus considers what one genera-

tion passes on to the next from a bird’s eye perspective: The total global resources or stocks of capital should be maintained or enhanced from generation to generation.

But what kind of resources or stocks of capital exists which should be passed on? Berger-Schmitt and Noll (2000), referring to Pearce (1993) and the World Bank (1997), have found the following:

- Natural capital; subsuming the stock of environmental assets;
- produced/man-made capital, relating to the stock of machinery, factories, buildings, and infrastructure;
- human capital, subsuming people’s productive capacities based on skills, education, and health; and
- social capital, referring to social networks tied by common norms and trustful relationships.

Accordingly, a sustainability assessment of a product should thus assess the extent to which the product causes a change in the stocks of these capitals available for future generations. This fits well with the LCA that considers changes in natural capital, and with the SLCA that, at least in some cases, considers changes in social, human, and produced/physical capital (Schmidt et al. 2004), both on a global scale.

The LCC, which assesses the total monetary costs of a product over its life cycle for the individual, is on the other hand different: It addresses first of all costs for the individual rather than global costs, and does thereby not live up to the global scope of sustainable development outlined above. Secondly, it addresses monetary costs, which according to the above understanding of capital can merely be seen as a means for trading different types of capital rather than a capital in itself.

According to these arguments, it is therefore suggested that, in order to perform a sustainability assessment as defined here, only an LCA, assessing changes in natural capital, and an SLCA, assessing changes in human, social, and produced/physical capital, is needed.

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This is not to say that the LCC is not of interest for e.g. a company, since monetary costs will determine whether the company will survive. The LCC is thereby relevant for the ‘sustainability of the company’, but whether a company survives is not of relevance for the ‘sustainability of the world society’, according to the definition of sustainable development given here.

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